

Remarks

Amendments

Claim 11 is amended to recite the term percent fat reduction in place of “reduced fat content.” The expression percent fat reduction is defined in the specification at page 8, line 5. Claims 15 and 21 are amended in order to improve clarity. Claims 14 and 20 are amended to delete the limitation on the concentration of cations. Example 1F (Table 3) demonstrates that a cation (calcium) is not an essential limitation. Upon entry of the amendments, claims 1-8 and 10-22 will be pending.

Claim rejections under 35 U.S.C. §102(b).

The Examiner has rejected Claims 1, 10, 11 and 12 under 35 U.S.C. §102(b), as being anticipated by US 4,504,509 (“Bell”) and US 5,362,510 (“Mizoguchi”). Bell discloses a frying batter comprising a starch that has been crosslinked with succinic anhydride, and that this crosslinked starch anticipates the claim limitation “starch succinate ester”. The Examiner has taken the position that because Bell’s succinate-crosslinked starch comprises starch hydroxyl groups esterified with the carboxyl groups of succinic acid, it is literally a “starch succinate ester”. The starches disclosed by Mizoguchi are cross-linked with epichlorohydrin, but Mizoguchi states that they may be crosslinked with “esterifying agents” such as succinic anhydride. The Examiner takes this as evidence that the succinate-crosslinked starches of Bell are starch succinate esters.

Applicants respectfully traverse. It is conceded that, taken in isolation, the ester bonds in Bells’ succinate-crosslinked starch could be identified by an organic chemist as “starch succinate ester” bonds. This is what Mizoguchi alludes to. However, the Examiner is improperly attributing this “plain meaning” to the claim term without regard for the conventions of the art, and in isolation from the specification. “Claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their ‘broadest reasonable interpretation’.” *In re Marosi*, 710 F.2d 799, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 75 USPQ2d 132, 1326 (Fed. Cir. 2005). It is the use of the words in the context of the written description, and as customarily used by those skilled in the relevant art,

that reflects the "ordinary" and "customary" meaning of claim terms. *Ferguson Beauregard/Logic Controls v. Mega Systems*, 350 F.3d 1327, 1338, 69 USPQ2d 1001, 1009 (Fed. Cir. 2003). See generally MPEP 2111.01.

To those of ordinary skill in the art, the term "starch succinate" does not refer to crosslinked starches, but to starches that are reacted with succinic anhydride under mild conditions so as to produce a succinic acid monoester. The succinate-crosslinked starches of Bell and Mizoguchi, in contrast, are succinic acid diesters. The reference work *Modified Starches: Properties and Uses*, O.B. Wurzburg, Ed. (CRC Press, 1986) contains a section dedicated to "Starch Succinates", which is attached hereto as Exhibit A. The monoester structure of the starch succinates is clearly set forth in the first paragraph. A copy of U.S. Patent No. 4,231,803 is attached as Exhibit B; it discloses the preparation of a "starch succinate" (see column 3, Example II) by a process that is virtually identical to the process described in the present specification (page 9, Example 1). These references make it clear that the term "starch succinate" has been understood in the art since at least 1978 (the filing date of the '803 patent) to refer to starch succinate monoesters.

It is also clear that the claim term "starch succinate" as used in the present specification has the customary sense of "starch succinate monoester". As an initial matter, the process of Example 1 can only lead to the monoester, because reaction of succinic anhydride with starch at a constant pH of 8.0 leaves the unreacted succinate carboxyl group in the form of a carboxylate anion, which is not capable of a crosslink-forming esterification reaction under the reaction conditions. Consistent with a starch monoester that is not crosslinked, the specification indicates that the starch succinate "may be further chemically modified, including without limitation, crosslinked..." (Page 4, lines 29-30, emphasis added.)

During examination, claims are to be given the broadest reasonable interpretation. (MPEP 2111.01). In view of the above remarks, Applicants respectfully submit that the broadest reasonable interpretation of the claim term "starch succinate ester" encompasses starch succinate monoesters, and does not encompass the crosslinked starch succinate diesters disclosed by Bell. (Applicants do not disclaim starch monosuccinate esters having, as an additional modification, some degree of crosslinking.) Applicants accordingly request reconsideration and withdrawal of the claim rejections under 35 U.S.C. 102(b).

Claim rejections under 35 U.S.C. §103(a).

Claims 2-6 are rejected under 35 U.S.C. §103(a) as obvious over Bell in view of US 4,035,235 (“Richards”). Claims 2-6 recite that the starch succinate of Claim 1 is converted to lower viscosity levels. Richards discloses starch octenylsuccinates that are converted to lower viscosity levels. According to the Examiner, it would have been obvious to one skilled in the art to convert the starch of Bell, by the conversion process of Richards, to obtain starch suspensions of lower viscosity. Applicants respectfully traverse.

Obviousness requires that (a) the references teach or suggest all of the claim limitations, and (b) there be some teaching, suggestion or motivation in the prior art to combine the references. As pointed out above, the starches of the present invention are starch succinate monoesters, having free carboxyl groups, and are chemically and structurally distinct from the crosslinked starches of Bell. Thus, the references do not teach or suggest the claim limitation “at least one starch succinate ester.” For this reason, application of the teachings of Richards to the crosslinked starches of Bell would not produce the converted starch succinates of Claims 2-6.

Furthermore, one of ordinary skill would find no motivation to apply the teachings of Richards to starch succinate monoesters lacking octenyl groups, because the object of Richards’ process is the provision of starches having a hydrophobic component.

For these reasons, Applicants respectfully submit that one of ordinary skill would find no teaching or suggestion in Bell or Richards, alone or in combination, to make the converted starch succinates of claims 2-6, and no teaching or suggestion to prepare fried foods having such modified starches adhering to them. Furthermore, the reduction in fat content of fried foods coated according to the present invention is a surprising and unpredictable result, which would not have been predicted by one of ordinary skill in the art and which was not suggested by Bell, Richards, or any of the cited prior art. Accordingly, reconsideration and withdrawal of the rejection of claims 2-6 over Bell in view of Richards is respectfully requested.

Claims 8 and 13-22 are rejected under 35 U.S.C. §103(a) as obvious over Bell in view of US 5,648,110 (“Wu”). The Examiner contends that Wu describes a process for coating potato strips, and that it would have been obvious to employ the coating methods of Wu with the coatings of Bell. Applicants respectfully traverse.

For the reasons set forth above, Bell does not teach or suggest the claim limitation “at least one starch succinate ester.” There is no teaching or suggestion in Wu to employ the starch succinate esters of the present invention, therefore Wu does not remedy this defect of Bell. Rather, Bell discloses crosslinked starches, which Wu in fact employs in the “starch enrobing slurry” of the Wu process (see Wu, column 4, lines 46-62).

In connection with claims 20-22, the Examiner also contends that it would be obvious to add the starch to the blanching water, because this would “save a separate coating step.” Applicants respectfully point out that the method of Wu calls for first blanching the potato strips, and then coating the potato strips with a slurry or batter containing crosslinked starches, such as the starches of Bell, with a “batter pickup of from about 8% to about 30%”. (Wu, column 3, lines 19-20.) Deploying the starch in the blanching water would not result in the adherence of 8-30% of the liquid. Also, the batters of Wu contain other ingredients, such as flour, gums, and leavening agents (see Wu, Table 1), so that a separate coating step would not be saved by adding the starch to the blanching water.

Finally, the reduction in fat content of fried foods coated according to the present invention is a surprising and unpredictable result, which would not have been predicted by one of ordinary skill in the art and which was not suggested by Bell, Wu, or any of the cited prior art. Accordingly, reconsideration and withdrawal of the rejection of claims 8 and 13-22 over Bell in view of Wu is respectfully requested.

Claims 1, 2 and 7 are rejected under 35 U.S.C. §103(a) as obvious over US patent application publication No. 2003/009974 (Shi). Shi discloses a glaze composition for foods that comprises a converted starch; the starch-based glaze having a particular viscosity range but otherwise being any chemically- or physically-modified starch, from any source. (see Shi, paragraphs 0010-0017.) Succinylated starches are one among the many starches mentioned as being suitable. (Shi, paragraph 0015.) The Examiner concedes that Shi does not mention fried foods, but contends that “[i]t would have been obvious to one skilled in the art to make a fried composition when wanting food having different texture and flavor.”

Applicants respectfully traverse. The purpose of a glaze is to provide a moisture barrier and/or to impart a surface sheen to foods. (Shi, paragraph 0002.) Glazes have traditionally been based on egg white protein, which has to be cooked in order to serve as a

glaze, and the object of Shi's invention is to provide a glaze that is effective when applied after cooking. (Shi, paragraph 0004.) Thus, there would be no motivation to apply a glaze composition of Shi to a food prior to frying it. Furthermore, given that Shi discloses that any and all modified starches are suitable for use in a glaze, one of ordinary skill would not find it obvious to select a succinylated starch from among the vast range of modified starches known in the art. Finally, the reduction in fat content of fried foods coated according to the present invention is a surprising and unpredictable result, which would not have been predicted by one of ordinary skill in the art and which was not suggested by Shi or any of the cited prior art. Accordingly, reconsideration and withdrawal of the rejection of claims 1, 2 and 7 over Shi is respectfully requested.

Conclusion

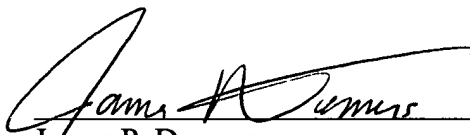
In view of the amendments and the above remarks, Applicants respectfully submit that the claims are in condition for allowance, and request that the rejections under 35 U.S.C. §§102 and 103 be reconsidered and withdrawn.

If the Examiner believes that a telephone interview would expedite the prosecution of the present application, he is cordially invited to contact applicants' undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Dated: October 28, 2008

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